WHAT IS CLAIMED IS:

1. A device for correcting a skew of an object in an image, comprises:

an input part for receiving an image;

a binarization part for binarizing pixels of the image into pixels having brightness values associated with character pixels and background pixels;

a candidate stripe generation part for generating candidate stripes by performing dilation on character regions of the binarized image;

a stripe classification part for classifying candidate stripes having a predetermined eccentricity and blob size among the candidate stripes, as valid stripes;

a skew angle decision part for calculating direction angles of the classified stripes, and determining a direction angle having the largest count value as a skew angle; and

a skew correction part for correcting a skew of an image by rotating the mage by the skew angle.

2. The device of claim 1, further comprising an image correction part for filling a blank space at a corner of the image, in which a skew of an object in the image is corrected by the skew correction part, with pixels close to the blank space in a horizontal direction.

3. The device of claim 1, wherein the binarization part further comprises:

a block classification part for dividing the image into blocks having a predetermined size, calculating pixel energies of the divided blocks, and classifying the blocks into character blocks and background blocks according to the calculated pixel energies;

a pixel threshold calculation part for calculating a pixel threshold using by calculating a brightness value having the maximum between-class variance between character pixels and background pixels in the character blocks output from the block classification part; and

a binarization part for binarizing pixels in the character blocks output from the block classification part into pixels having brightness values for character pixels and background pixels based on a comparison of the pixel energies output from the block

classification part with the pixel threshold, and converting the pixels in the background blocks into background pixels.

4. The device of claim 3, wherein the block classification part further comprises:

a block division part for dividing the input image into blocks having a predetermined size;

a Discrete Cosine Transform (DCT) conversion part for DCT-converting the image blocks output from the block division part;

an energy calculation part for calculating a sum of absolute values of dominant DCT coefficients in each of the DCT-converted blocks, and outputting the calculated sum as an energy value of the corresponding block;

a threshold calculation part for summing energy values of the blocks, output from the energy calculation part, and generating a threshold by dividing the sum of the energy values by the total number of the blocks; and

a classification part for sequentially receiving the block energy values output form the energy calculation part, and classifying the blocks into character blocks and background blocks by comparing the received block energy values with the threshold.

5. The device of claim 4, wherein each of the blocks has a size of 8×8 pixels, and the energy value of each block is calculated by

$$S^k = \sum_{i=1}^{9} \left| D_i^k \right|$$

where $\left| D_i^k \right|$ denotes an i^{th} dominant DCT coefficient of a k^{th} block, and S^k denotes a sum of absolute values of dominant DCT coefficients in the k^{th} block.

6. The device of claim 3, further comprising:

a block grouping part connected to the block classification part and the pixel threshold calculation part, for grouping neighboring blocks of a character block output from the block classification part along with the character block, and outputting the grouped block to the pixel threshold calculation part.

7. The device of claim 1, wherein the candidate stripe generation part

comprises:

a dilation part for dilating a region of the binarized character block and generating candidate stripes in which neighboring characters are connected; and

an erosion part for performing erosion on the candidate stripes so that candidate stripes situated at up and down of the dilated candidate stripes are separated.

8. The device of claim 7, wherein the candidate stripe generation part comprises a morphological filter.

9. The device of claim 1, wherein the stripe classification part calculates a length of a candidate stripe through calculation of a blob size and eccentricity based on a moment of the candidate stripe, and classifies the corresponding candidate stripe as a valid stripe when the eccentricity and the blob size are larger than or equal to their predetermined thresholds.

10. The device of claim 9, wherein the blob size is calculated by the following equation in which p and q are 0,

$$\mu_{pq} = \sum_x \sum_y (x - \bar{x})^p (y - \bar{y})^q$$

$\bar{x}$: *horizontal centroid of object*

$\bar{y}$: *vertical centroid of object*

wherein the eccentricity is calculated by

$$e = \frac{4\mu_{11}{}^2 + (\mu_{20} - \mu_{02})^2}{(\mu_{20} + \mu_{02})^2}$$

where the eccentricity e denotes a length of a candidate stripe.

11. The device of claim 1, wherein the skew angle decision part calculates direction angles of the classified stripes, and determines a direction angle having the largest count value as a skew angle.

12. The device of claim 11, wherein the skew angle decision part calculates a direction angle of a stripe in accordance with the following equation.

$$\theta = \frac{1}{2} \arctan\left(\frac{2\mu_{11}}{\mu_{20} - \mu_{02}}\right)$$

13. A device for correcting a skew of an object in an image, comprising:

an input part for receiving an image;

a binarization part for binarizing pixels of the image into pixels having brightness values for character pixels and background pixels;

a horizontal pixel subsampling part for performing horizontal subsampling on the binarized image at a predetermined ratio;

a candidate stripe generation part for dilating character blocks in the binarized image and generating candidate stripes;

a vertical pixel subsampling part for performing vertical subsampling on the image having the candidate stripes at a predetermined ratio;

a stripe classification part for classifying candidate stripes having a predetermined eccentricity and blob size among the vertical-subsampled candidate stripes, as valid stripes;

a skew angle decision part for calculating direction angles of the classified stripes, and determining a direction angle having the largest count value as a skew angle; and

a skew correction part for correcting a skew of an object in an image by rotating the mage by the skew angle.

14. The device of claim 13, further comprising:

an image correction part for filling a blank space at a corner of the image in which a skew of an object in the image is corrected by the skew correction part, with pixels close to the blank space in a horizontal direction.

15. A method for correcting a skew of an object in an image, comprising the steps of:

receiving an image;

binarizing pixels of the image into pixels having brightness values associated with character pixels and background pixels;

dilating character regions of the binarized image and generating candidate stripes;

classifying candidate stripes having a predetermined eccentricity and blob size

among the candidate stripes, as valid stripes;

calculating direction angles of the classified stripes;

determining a direction angle having the largest count value among direction angles as a skew angle; and

correcting a skew of an image by rotating the mage by the skew angle.

16. The method of claim 15, further comprising the step of filling a blank space at a corner of the skew-corrected image, with pixels close to the blank space in a horizontal direction.

17. A method for correcting a skew of an object in an image, comprising the steps of:

receiving an image;

binarizing pixels of the image into pixels having brightness values associated with character pixels and background pixels;

performing horizontal subsampling on the binarized image at a predetermined ratio to reduce horizontal pixels;

dilating character blocks in the vertical-subsampled binarized image and generating candidate stripes;

performing vertical subsampling on the binarized image having the candidate stripes at a predetermined ratio to reduce vertical pixels;

classifying candidate stripes having a predetermined eccentricity and blob size among the vertical-subsampled candidate stripes, as valid stripes;

calculating direction angles of the classified stripes;

accumulating the direction angles and determining a direction angle having the largest count value as a skew angle; and

correcting a skew of an object in an image by rotating the mage by the skew angle.

18. The method of claim 17, further comprising the step of:

filling a blank space at a corner of the skew-corrected image, with pixels close to the blank space in a horizontal direction.